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ABSTRACT

The research described in this report was conducted to (1) ascertain employers' perceptions of how well the telecommunications technology program at Skyline College (California) meets their needs; (2) determine what advanced-skills training would benefit students; and (3) provide a model for an employer follow-up study. Employers' names were obtained from 19 former students, and these employers were sent questionnaires directed to the supervisors of former students. Twelve responses were received. The results of the survey showed that the majority of employers found former students to be exceptionally able or well able for the job held. Nine employers rated the former students/employees as above average and one was rated superior. The employers noted that attitude was important in determining who was hired. As a result of the study, recommendations were made for further employer follow-up. (KC)

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Telecommunications Technology
Skyline College

3300 College Drive □ San Bruno, California □ 355-700

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Employer Follow-up

Responses of employers of former Telecommunications Technology students.

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Spring, 1986

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PURPOSE

The purpose of the project was to

- ascertain employers' perceptions of how well Telecommunications Technology meets their needs.
- determine what advanced-skills training would benefit students.
- provide a model for an employer follow-up study.

BACKGROUND

The Telecommunications Technology Program evolved out of industry's need for an expanded work force of qualified technicians and Skyline College's dedication to learning and excellence in teaching. Through cooperative planning between industry and Skyline College, a curriculum was developed to meet the needs of this rapidly growing area. The first course was offered during the Spring 1983 semester.

PROCEDURES

As part of the Telecommunications student follow-up[1], former Telecommunications students employed in the telecommunications industry were asked for the name of their supervisor so that we could contact the supervisor for his/her opinion about the Telecommunications Technology Program at Skyline College. Providing the supervisor's name was identified as optional and 19 respondents provided the name.

On March 19th questionnaires were sent to appropriate supervisors at the companies listed in Table 1. Copies of the cover letter and questionnaire are in Appendix 1. Ten responses were received by the requested date of April 1st. Follow-up phone calls to nonresponders revealed that some of the supervisors and/or former students no longer are employed by the company, two companies are no longer in (local) operation, and four promised to reply (but did not do so by April 18th). On April 18th, a reminder (Appendix 2) sent to nonresponders brought two responses. Companies contacted for this study are shown in Table 1.

[1] Student Follow-up, Fall 1985. Prepared by Christine L. Case.

Table 1. Selected companies employing former Telecommunications students.

	Responded to follow-up
Allnet	Yes
AT & T Information Systems	Yes
Behrman Associates	No[a]
GTE Sprint Communicatioins Corp	Yes
Low Voltage Specialties	No[a]
MCI	Yes
Pacifica TCI Cable	No[b]
Pacific Bell (6)	3[c]
Pacific Gas and Electric Co	Yes
Rolm	Yes
San Francisco Police Department	No[b]
Telecommunications Inc	Yes
U.S. Postal Data Center (2)	Yes

[a]Not listed in directories as a local company.
[b]Neither supervisor nor employee are employed there at present.
[c]One supervisor is no longer there. Two did not respond.

RESULTS

Companies responding to the questionnaire are listed in Table 1. Six of the students represented are graduates of the Telecommunications Program and six completed TCOM 401 and/or TCOM 430 only.

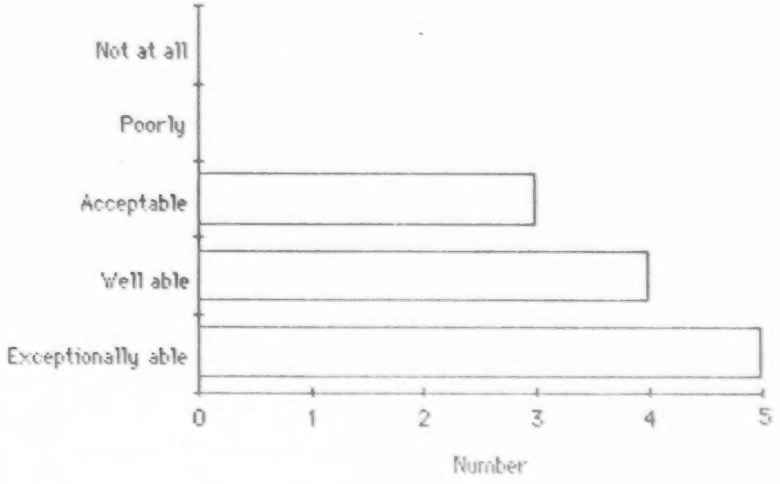
Jobs currently held by these former students are shown in Table 2.

Table 2. Jobs held by students identified for this study.

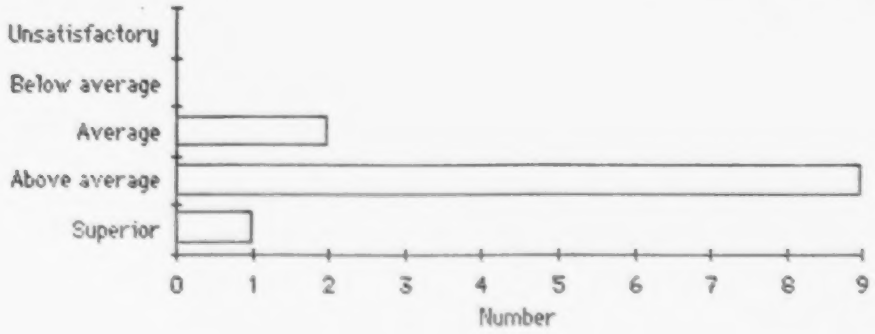
	Program graduate?
Technician (2)	Yes
Telephony technician (autodialer/OCC access)	No
Systems technician (3)	One
Technical service representative II	Yes
Office assistant	No
Surveillance supervisor	Yes
Telecommunications hardware specialist	Yes
Communications technician I	Yes
Telecommunications apprentice technician	Yes

Tabulated responses are shown on pages 6 through 9. Selected responses are shown below.

Question 5. How would you rate the suitability of this employee for the job held? 12 responses.



Question 6. How would you rate this employee compared to other new employees who did not complete Telecommunications Technology at Skyline College? 12 responses.



CONCLUSIONS

The survey sample is too small to provide information from which generalizations about the Telecommunications Technology Program can be made. However, comments provided by the respondents are highly supportive of the program.

...has been a valuable employee. His training at Skyline enabled him to step in and do the job required with a minimum of supervision and guidance. I think your program is excellent.

This employee was placed in this job title [Systems Technician] because of his training in Telecom. at Skyline College.

The other-comment received provides instructors with information regarding career guidance for the students.

It may be difficult to instruct, but the key subject in today's ever changing market place is the...attitude. That separates the [people we hire] from the people we do not hire. [We hire people who want] a job they can set their teeth into and run...make sure things get done [people].

RECOMMENDATIONS

Periodic contact with employers of Program graduates is important to ensure that curriculum and instruction continue to train students for available jobs and provide opportunity for students to develop "above average" skills. In order to make an employer follow-up study realistic (i.e., to have a larger sample), it is recommended that

- Job status of Program graduates be recorded upon graduation.
- Graduates be asked to keep the Telecommunications Technology staff apprised of their whereabouts.
- Occasionally, a postcard survey be sent to graduates to update addresses and employment records.

Responses to Survey

__12 responses. Numbers indicate responses.__

1. In what capacity are you related to the employee named above? (Check the box.)

- ☐ Employer
- 12 Supervisor
- ☐ Other (Write in) _____

2. What is the title of the job for which this employee is hired?

See Table 2.

3. In the following aspects of employment, how well prepared was the employee previously named for the job for which hired?

	Not at all	Poorly	Somewhat	Well	Does not apply
a. Job know-how, application of technical knowledge and skill	☐	☐	5	7	☐
b. Use of tools and equipment	☐	1	3	8	☐
c. Selection and care of space, materials, and supplies	☐	☐	3	6	3
d. Quality of work, ability to meet quality demands	☐	☐	5	7	☐
e. Quantity of work, satisfactory amount of output	☐	☐	3	9	☐
f. Initiative, doing jobs that need doing	☐	☐	1	11	☐
g. Being able to work with others - clients, co-workers, supervisor	☐	☐	1	11	☐
h. Safety habits, minimizing chance for accidents	☐	☐	4	8	☐

4. Below is a list of specific job competencies, how well prepared was the employee previously named for performing these tasks?

	Very adequate	Adequate	Inadequate	Not applicable
a. Knowledge of schematics and circuit reading	3	6	1	2
b. Troubleshooting circuits	5	6	☐	1
c. Use of test equipment (e.g., TMS, Buttset, VOM, oscilloscope, datascope)	5	4	1	2
d. Ability to perform punch down, crossconnecting, and jumpering	6	4	☐	2
e. Knowlege of and ability to install, maintain, and repair key systems and PBXs	1	2	2	7
f. Troubleshooting trunking impairments	2	5	2	3
g. Troubleshoot data networks	3	1	1	7
h. Install peripheral devices	1	5	1	5

5. How would you rate the suitability of the employee previously named for the kind of job held? (Check the box that applies.)

5 Exceptionally able
4 Well able
3 Acceptable
☐ Poorly
☐ Not at all

6. How would you rate this employee's skills compared to other new employees who did not complete Telecommunications Technology at Skyline College?

1 Superior
9 Above average
2 Average
☐ Below average
☐ Unsatisfactory

7. Below is a list of personal qualities and job skills. Check the box before the **three** you consider **most important** for a person entering the job held by the previously named employee.

8 Ability to get along with others - co workers, supervisors, customers.
6 Initiative
2 Knowledge of electronics theory
5 Judgment - ability to make decisions, ability to plan and organize
4 Competency in using hand tools and telephony test equipment
2 Knowledge of transmission theory
4 Accuracy, quality, and thoroughness
☐ Work quantity
3 Knowledge of data communications
1 Other (Please specify) **Knowledge of basic telephony.**

8. What are the requirements for this job?

2 No experience or education is required.
5[a] Previous experience at a similar company.
4[a] College or technical school coursework. Please specify education required:
- •High school diploma and some type of technical training such as basic telephony.
- •More than likely knowledge or previous experience will get you in the door but we are a merit corp.
- •Transmission, Data comm, ICL, Intro. to COBOL,Intro to PC.
- •Completion of courses similar to those offered at Skyline to qualify for an entry level position.
- •Electronic and FCC.

[a]Three require both previous experience and technical training.

9. Is on-the-job-training required for this job?

1 No

10 Yes. If yes, please specify topics covered in training courses.

- Communications skills, transmission theory, safety, private line data and voice.
- Some data set, protocol.
- TSO, Data comm. as it relates to this data center.
- All data communications subjects.
- Switching systems (Common Control Electronic), networking and network control, XMSN systems and theory, network managements, supervising skills.
- Familiarity in PG&E communications equipment and method of operation.
- Installation and maintenance of Rolm specific equipment.
- Fiber optics (porting and installation).
- Cabling and plant facilities (standards, numbering, etc.)
- Formal Rolm schools.

10. Below is a list of specific competencies. Check the boxes before the ones you consider **most important** for a person entering the job held by the previously named employee. One checked all 9 choices.

5 Telephony trouble fault isolation
4 Transmission fault isolation
5 Telephone systems troubleshooting (CPE and CO)
6 Knowledge of data transmission
☐ FCC general radio-telephone license
2 Knowledge of key systems
2 Circuit reading
3 Maintenance of analog multiplex equipment
7 Troubleshooting telephone circuits

1 each Other **(Please specify)**

Ability to work with people.
Knowledge of fiber optics.
Knowledge of digital telephony.
Network management.
Tandem processors.
Installation of telephony CPE.

Comments. Please write any additional comments below. See page 4.

Appendices

1-Questionnaire sent to employers

2-Reminder sent to employers

APPENDIX 1

Telecommunication Technology
Skyline College

3300 College Drive □ San Bruno, California 94066 □ Phone 415 355-7000

March 19, 1986

Dear _____,

We are currently evaluating the effectiveness of the Telecommunications Technology Program at Skyline College. One of our training objectives is to equip students with job skills required to enter the telecommunications industry. As the supervisor of one of our former students, you can help us determine if we are doing what we have set out to do.

Will you take a few minutes to assess the preparation for employment of the employee named on the enclosed evaluation form? This is designed to give us vital information for determining the effectiveness and identifying strengths and weaknesses of the program. No employee, employers, or supervisors will be identified in the results of this study. All responses to questions will be kept in strict confidence.

Would you complete the evaluation form and mail it in the enclosed envelope by April 1, 1986? Thank you for your valuable contribution to the improvement of training for future Telecommunications Technology students.

Sincerely yours,

Donald D. Biederman
Division Director
Science-Mathematics-Technology

To the Employer or Supervisor of: _____

1. In what capacity are you related to the employee named above? (Check the box.)

- ☐ Employer
- ☐ Supervisor
- ☐ Other (Write in) _____

2. What is the title of the job for which this employee is hired?

_____

3. In the following aspects of employment, how well prepared was the employee previously named for the job for which hired? (Circle the number below the answer.)

	Not at all	Poorly	Somewhat	Well	Does not apply
a. Job know-how, application of technical knowledge and skill	1	2	3	4	5
b. Use of tools and equipment	1	2	3	4	5
c. Selection and care of space, materials, and supplies	1	2	3	4	5
d. Quality of work, ability to meet quality demands	1	2	3	4	5
e. Quantity of work, satisfactory amount of output	1	2	3	4	5
f. Initiative, doing jobs that need doing	1	2	3	4	5
g. Being able to work with others - clients, co-workers, supervisor	1	2	3	4	5
h. Safety habits, minimizing chance for accidents	1	2	3	4	5

Please turn page

4. Below is a list of specific job competencies, how well prepared was the employee previously named for performing these tasks?

	Very adequate	Adequate	Inadequate	Not applicable
a. Knowledge of schematics and circuit reading	☐	☐	☐	☐
b. Troubleshooting circuits	☐	☐	☐	☐
c. Use of test equipment (e.g., TMS, Buttset, VOM, oscilloscope, datascope)	☐	☐	☐	☐
d. Ability to perform punch down, crossconnecting, and jumpering	☐	☐	☐	☐
e. Knowlege of and ability to install, maintain, and repair key systems and PBXs	☐	☐	☐	☐
f. Troubleshooting trunking impairments	☐	☐	☐	☐
g. Troubleshoot data networks	☐	☐	☐	☐
h. Install peripheral devices	☐	☐	☐	☐

5. How would you rate the suitability of the employee previously named for the kind of job held? (Check the box that applies.)

- ☐ Exceptionally able
- ☐ Well able
- ☐ Acceptable
- ☐ Poorly
- ☐ Not at all

Please turn page

6. How would you rate this employee's skills compared to other new employees who did not complete Telecommunications Technology at Skyline College?

- ☐ Superior
- ☐ Above average
- ☐ Average
- ☐ Below average
- ☐ Unsatisfactory

7. Below is a list of personal qualities and job skills. Check the box before <u>the **three** you consider **most important**</u> for a person entering the job held by the previously named employee.

- ☐ Ability to get along with others - co workers, supervisors, customers.
- ☐ Initiative
- ☐ Knowledge of electronics theory
- ☐ Judgment - ability to make decisions, ability to plan and organize
- ☐ Competency in using hand tools and telephony test equipment
- ☐ Knowledge of transmission theory
- ☐ Accuracy, quality, and thoroughness
- ☐ Work quantity
- ☐ Knowledge of data communications
- ☐ Other **(Please specify)** _____

_____

8. What are the requirements for this job?

- ☐ No experience or education is required.
- ☐ Previous experience at a similar company.
- ☐ College or technical school coursework. Please specify education required: _____

_____

_____

9. Is on-the-job-training required for this job?

- ☐ No
- ☐ Yes. If yes, please specify topics covered in training courses.

_____

_____

_____

_____

Please turn page

10. Below is a list of specific competencies. Check the boxes before the ones you consider **most important** for a person entering the job held by the previously named employee.

- ☐ Telephony trouble fault isolation
- ☐ Transmission fault isolation
- ☐ Telephone systems troubleshooting (CPE and CO)
- ☐ Knowledge of data transmission
- ☐ FCC general radio-telephone license
- ☐ Knowledge of key systems
- ☐ Circuit reading
- ☐ Maintenance of analog multiplex equipment
- ☐ Troubleshooting telephone circuits
- ☐ Other (Please specify) _____

_____

_____

Comments. Please write any additional comments below.

Thank you! Please return in the enclosed envelope.

APPENDIX 2

Telecommunication Technology
Skyline College

3300 College Drive □ San Bruno, California 94066 □ Phone 415 355-7000

To: **Date:** April 18, 1986

From: Christine Case

On March 19, we sent you a request to assist us in evaluating our Telecommunications Technology Program. Your assistance is very important as you are the only one who can provide specific information for us. I called you on April 2 and 7, but have still not received your reply.

As you can see, the letter U on my typewriter isn't working - leaving a significant void in words and meaning. The information I have is incomplete without you just as these words are incomplete without the letter U. Copies of the original letter and questionnaire are enclosed. Please provide the information requested and return to me by April 25th.

If you have any questions or concerns, I can be reached at 355-7000, ext. 376 or ext. 221.